

REMARKS

Claims 1-22 are currently pending in the Application. Claims 1-22 stand rejected. Claims 8 and 21 are objected to. Claims 8 and 21 are amended herein. Applicants respectfully traverse the rejections as follows.

Claim Objections

Claims 8 and 21 are objected to. The amendments to Claims 8 and 21 overcome the objections.

35 U.S.C. § 103(a) Rejections

Claims 1-22 stand rejected as being obvious in light of numerous references and combinations of references. In order to maintain a *prima facie* obviousness rejection under 35 U.S.C. § 103(a), three basic criteria must be met:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

See, M.P.E.P. §2142, *citing In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). The cited reference fail to teach or suggest all of the recitations of Claims 1-22 of the present Application. This failure precludes the *prima facie* obviousness rejections of the claims.

Claims 1-5, 9-10, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Faller (United States Pat. No. 4,627,741), over Manske (United States Pat. No. 5,215,378), and over Manske in view of Faller. Applicants respectfully traverse these rejections.

Faller proposes a minimum-maximum thermometer having a "U" shaped capillary tube 5 with an extension medium (not shown), a mercury filament 10, and magnetically attractable display pins 11, 12. *See, Faller* at col. 2, lines 24-26. The minimum-maximum thermometer proposed by Faller is a traditional minimum-maximum thermometer.

Manske proposes “a dual temperature indicator which produces a visual, irreversible indication that the device has been subjected to selected critical temperatures at two predetermined temperature extremes.” *See, Manske* at col. 1, lines 58-62. The irreversible indication results from the mixing of a first liquid and a second liquid at a pre-determined low or high temperature. The two liquids of Manske are “miscible.” *See, Manske* at Abstract and col. 4, lines 12-15.

Claim 1 is the only independent claim. Claim 1 recites a maximum/minimum thermometer comprising an expansion liquid and a mercury free transfer liquid that is substantially immiscible with the expansion liquid.

The Action admits that “Faller does not disclose a transfer liquid.” *See, Action* at p. 3. If this allegation is true, Faller admittedly fails to make obvious independent Claim 1 because Faller does not “teach or suggest all the claim limitations.” *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). However, a reading of Faller indicates that Faller teaches a traditional minimum/maximum thermometer wherein the mercury filament is a transfer liquid and the extension medium of Faller, which is not shown, is an expansion liquid. In traditional minimum/maximum thermometers, which Faller appears to propose, mercury filaments commonly move in response to the expansion and contraction of an expansion liquid, thereby pushing an index along the capillary tube. The index remains in position along the capillary tube, such as by magnetic positioning as proposed by Faller. If Faller does propose a traditional minimum/maximum thermometer, the mercury transfer liquid does not make obvious Claim 1 because Claim 1 specifically recites that the transfer liquid is mercury free. Faller alone fails to teach or suggest a transfer liquid as recited in Claim 1 because the transfer fluid does not exist or is mercury; therefore, a *prima facie* obviousness rejection cannot be maintained. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Similarly, Manske fails to make obvious the recitations of Claim 1. Claim 1 specifically recites “a transfer liquid (48) which is substantially immiscible with the expansion liquid.” The Action alleges that Manske’s alleged transfer liquid is not miscible with Manske’s alleged expansion liquid. *See, Action* at p. 3. However, Manske teaches that each of the two liquids used by the Manske device are “miscible.” *See, Manske* at Abstract and col. 4, lines 12-15. The

incapable of mixing

fact that the Manske liquids are miscible fails to teach or suggest the immiscibility recited by independent Claim 1. Therefore, a *prima facie* obviousness rejection in light of Manske alone is not supported. See, *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

A combination of Manske and Faller also fails to meet the criteria established to maintain a *prima facie* obviousness rejection of Claim 1. In particular, each of the references in the combination fails to propose a mercury free transfer liquid that is substantially immiscible with the expansion liquid. The failure of both references to teach or suggest such recitations precludes a *prima facie* obviousness rejection under 35 U.S.C. § 103(a) because the combination does not make up for the deficiency in the teachings. See, *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Furthermore, there is no motivation to combine Manske with Faller to make obvious Claim 1. Faller proposes a traditional minimum/maximum thermometer that is capable of measuring minimum and maximum temperatures over a period of time. Manske, on the other hand, irreversibly shows when a minimum or maximum temperature has been reached. Manske is not concerned with measuring a temperature. In addition, there is no indication in Manske that the expansion or contraction of the colorless organic compound and dyed organic compound would be sufficient to produce a measurable temperature change. The volume of the portion of separating liquid in Manske is so small that it would not support two indices and move them independently along the capillary tube to indicate the extreme temperatures. Furthermore, even if the indices were adopted by Manske, the indices would be drawn into the bulb of Manske upon reaching a certain temperature, thereby defeating the purpose of the indices. Therefore, no motivation to combine the teachings of the references exists in the references or in the art, precluding a *prima facie* obviousness rejection. See, *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Claims 2-5, 9-10, and 19 depend from independent Claim 1. As dependent claims of a nonobvious independent claim, Claims 2-5, 9-10, and 19 are also nonobvious and therefore allowable over the 35 U.S.C. § 103(a) rejection. See, *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)(stating that if an independent claim is nonobvious under 35 U.S.C. § 103 then any claim depending therefrom is nonobvious); see also, M.P.E.P. § 2143.03.

Claims 6-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Manske and Faller and in further view of Gradishar (United States Pat. No. 3,688,582). As dependent claims of a nonobvious independent Claim 1, Claims 6-7 are also nonobvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03. Furthermore, the combination of references fails to teach or suggest all of the claim recitations because none of the references recite a mercury free transfer liquid that is substantially immiscible with an expansion liquid. The lack of such teaching precludes a *prima facie* obviousness rejection. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Manske, Faller, and Gradishar, and in further view of Bealing et al. (United States Pat. No. 5,990,199). As with the other dependent claims, Claim 8 is allowable over the 35 U.S.C. § 103(a) obviousness rejection because dependent claims of nonobvious independent claims are also nonobvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03. Furthermore, the combination with Bealing et al. does not teach or suggest a mercury free transfer liquid that is substantially immiscible with an expansion liquid as recited in the independent claim from which Claim 8 depends. Hence, the combination of references fails to teach or suggest all of the claim recitations, precluding a *prima facie* obviousness rejection. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Claims 10-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Manske and Faller and in further view of Hickman (United States Pat. No. 1,942,857). Claims 10-18 depend from nonobvious independent Claim 1 and are therefore nonobvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03. In addition, the requirements for establishing a *prima facie* obviousness are not met by the combination of references. Claims 10-18 are therefore allowable.


Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Faller and Manske and in further view of GB 0001967/GB041882. Claim 20 depends from Claim 1 and is therefore allowable as a dependent claim of a nonobvious independent claim. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03.

Claims 21-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Faller and Manske and in further view of Bernard (United States Pat. No. 4,908,503). Claims 21-22 depend from nonobvious independent Claim 1. As dependent claims, they are allowable over the 35 U.S.C. § 103(a) obviousness rejection. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03.

CONCLUSION

The concerns of the Examiner addressed in full, Applicants respectfully request withdrawal of the outstanding rejections and the issuance of a Notice of Allowance forthwith. The Examiner is encouraged to direct any questions regarding the foregoing to the undersigned, who may be reached at (919) 854-1400.

Respectfully submitted,



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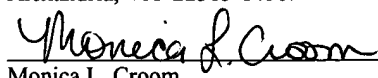
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